

WHAT IS CLAIMED IS:

1. A method for providing information services comprising a means for controlling brokering and booking resources for offering a service (the means will be referred to as a brokering means hereinafter) intervening between resources for information processing services to be offered by a plurality of providers of the resources for information processing services and administrators of operating information service systems including computer platforms (both the providers and administrators will be referred to as service resource providers hereinafter) and users of said resources, said brokering means holding credit data including resource performance data for the resource providers, said brokering means comprising the steps of:

receiving performance request specifications of resources for a user-desired service from the user;

simulating estimated service performance of resources, based on said request specifications and said credit data, thereby allocating one or more combinations of serviceable resources that satisfy, in the aggregate, said request specifications;

issuing a resource reservation ticket to the user, the ticket including data that entitles the user to utilize said one or more combinations of resources; and

placing an order with the resource providers for said one or more combinations of resources, thereby booking the resources for the user.

2. The method for providing information services as recited in claim 1, wherein said brokering means executes simulation of the performance of resources, based on the user's request specifications, allocates the adequately-performing resources of one or more resource providers, according to the result of the simulation, determines what quantity of resources are necessary and sufficient for fulfilling said request specifications and time during which function and resources are required to run, and issues the resource reservation ticket, according to the allocation, wherein the brokering means will issue the respective resource reservation tickets to a plurality of service users (customers), moreover, after successfully reserving the resources, the brokering means sends the service performance request specifications, based on which the resources have been reserved, to the providers of the allocated resources, and when the resource providers determine their service resources required to execute the service in future, the brokering means compares available function and resources and required function and resources for a specific period and manages the thus obtained data to

decide whether the service providers can provide additional service performance resources.

3. The method for providing information services as recited in claim 1, wherein data to be written to the resource reservation ticket to be traded includes a requested service type and service performance data in which maximum time and average time estimated to be taken to execute the information processing service are specified and the brokering means performs at least either estimating whether the resources can execute the information processing service described in the performance request specifications or estimating how well the resources satisfy the performance request specifications.

4. The method for providing information services as recited in claim 1, further including a means for re-estimating the performance of resources for an additional order, said means to re-calculate resource performance specification parameters necessary and sufficient for executing the information processing service specified in the user's performance request specifications and present the data of the calculated performance specification parameters to the resource providers if said brokering means estimates that the resources cannot execute the information processing

service specified in the performance request specifications within the maximum time.

5. The method for providing information services as recited in claim 1, wherein the reliability of the service providers is evaluated by comparing the guaranteed service performance of the reserved resources and the service performance during or after the actual run of the resources and the evaluation output data is recorded as part of the credit data.

6. The method for providing information services as recited in claim 1, wherein, if one or more allocated resources on computer platforms become unable to operate when executing the service, switching from the resources of relatively low reliability service performance to other resources of relatively high reliability service performance is performed by dynamically gaining access to the credit data, thereby providing run-time endorsement of the resource reservation ticket.

7. The method for providing information services as recited in claim 1, wherein said brokering means determines whether the resources can provide the service from the performance data of the resource providers' computer platforms required

to execute the service, while taking the providers' credit evaluation into consideration by referring to the credit management data.

8. The method for providing information services as recited in claim 1, wherein said brokering means edits the performance request specifications data for an information processing service electronically sent from the user of the information processing service into resource reservation data for assigning the resource run tasks to the resource providers, according to the information processing service type, electronically sends said resource reservation data to the appropriate resource providers, issues the resource reservation ticket created with the input of said resource reservation data, and stores the resource reservation data into a storage medium for management.

9. A method for reserving and managing information service resources comprising brokering systems in multilevel hierarchical structure, each brokering system including a resource management table, means for registration, and a storage medium, arranged such that lower-level brokering systems gain access to an upper-level brokering system as a user of the brokering system, wherein the resource management table of the upper-level brokering system

contains partial data, a copy of the relevant part of Service Level Management data, resource reservation data, credit management data for service resource providers which are maintained in the lower-level brokering systems, a top level brokering system includes a brokering means that executes the method recited in at least one of claims 1 to 8 and group-bounded service request specifications data, and users' service request specifications input to the lower-level brokering systems are collected as said group-bounded service request specifications data on the top-level brokering system.

10. An apparatus for authenticating an authorized service user comprising a means for authorized service user authentication which authenticates that the user is authorized to use service by verifying the validity of the user's resource reservation ticket issued to guarantee the right of the service user and the performance of the resources to execute the service, a first storage means to store said resource reservation ticket data, a second storage means to store resource allocation information, a means for communication between said first storage means and second storage means, and a means for verifying certificate data which executes predetermined arithmetic processing based on algorithm for encryption/decryption and other

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